

ABSTRACT OF THE DISCLOSURE

Pulse-width modulation (PWM) control and drive circuitry particularly applicable to an array of electrostatic actuators formed in a micro electromechanical system (MEMS), such as used for optical switching. The high-voltage portion may be incorporated in an integrated circuit having drive cells vertically aligned with the MEMS elements. A control cell associated with each actuator includes a register selectively stored with a desired pulse width. A clocked counter distributes its outputs to all control cells. When the counter matches the register, a polarity signal corresponding to a drive clock is latched and controls the voltage applied to the electrostatic cell. The MEMS element may be a tiltable plate supported in its middle by a torsion beam. Complementary binary signals may drive two capacitors formed across the axis of the beam. The register and comparison logic for each cell may be formed by a content addressable memory.